The Southern Agriculturist.

(NEW SERIES.)

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For the Southern Agriculturist.

OBSERVATIONS ON THE CULTIVATION OF COTTON,

DESIGNED PRINCIPALLY FOR THE MIDDLE DISTRICTS OF SOUTH-CAROLINA.

BY JOHN CLARKSON.

Although the profit arising from the cultivation of cotton is diminished by the present depressed price of the article, yet its continued tillage, to a great extent, is encouraged by the advantages which it possesses over grain crops, even in those limited sections where the latter could be substituted. Cotton, besides growing in any soil not saturated with water, possesses other intrinsic qualities, entirely independent of price; which are not generally, if at all, equalled by any other staple commodity. And if superseded by other staples, it must not be by those commonly cultivated for grain. Grain crops are in their own nature exhausting to the soil, and they are rendered still more so, by the farmer's gathering, not only the grain, (or seed,) but the leaves also, and in some instances, such as oats, even the stalks. Whilst the cotton plant returns the leaves, stalks, seed-vessels, and even seed itself, which last is a valuable manure; all that is taken by the planter, being merely the lint, which is only, we will say, one eighth of the weight of the whole plant. On the other hand, in the cultivation of Indian corn, we will call it, one half gathered; of oats, say three fourths. Now these calculations, to many, may seem unimportant; but to the practical farmer, who knows the value of manure, and particularly, *in this calculation*, of cotton-seed manure, they will be duly appreciated. The cotton also makes a rotation with the grain planted at all events for provision. And its dense foliage presents an extensive surface to the atmosphere, and so obtains, we may suppose, a corresponding nutriment independent of the soil.

Of all the methods practised in sowing the seed of cotton, the most certain way to obtain a "stand" is to drill it; for if planted in

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chops, should one fail in consequence of trash being over it, or should die after coming up, or a vacancy occur from any other cause, there will be a space left of two feet, where it was chopped at a distance of one foot; whereas in the drill method the same distance being designed, should a stalk fail from any cause, at the spot intended for it, another could be substituted by leaving it either a little nearer, or a little wider, and then proceeding to thin at the intended distance. The plants too are not so much crowded, and of course suffer less from that cause, and from falling down in the thinning. Notwithstanding, however, the fairer prospect of obtaining a "good stand," I prefer the chopping, or what is still better, the dibbling; by the latter mode especially, the desired distance can be obtained with more precision, by the use of a marking stick attached to the dibble; so that the spots planted can be made equidistant. The dibbler too, can easily shorten or lengthen the distance according to the quality of the land, by gaining or losing a few inches. In addition to the precision in arriving at the wished-for distance by the chopping or dibbling mode, time is saved in the thinning, and seed for manuring. When manure is applied, I would recommend the check planting. Should the top of the bed be dry at the time of sowing, it ought, first of all, to be taken off with the hoe, (whichever mode of planting is adopted,) so as to place the seed in moist earth; for if that is not done, and the weather should continue dry, bad, or late "stands," or both will be the consequence. Vegetation will not take place without a certain degree of moisture, so that it is expedient to obtain this by any means in our power, for which reason I object to the shallow planting, and would put the seed at a reasonable depth. The thinning should commence as soon as the cotyledons expand fully; before a single leaf appears let this be done. This would contribute greatly to a vigorous growth of the plant, and is very important, our climate being often too short for the plants to mature all their fruit. Serious injury too, is often done in the process of thinning to the plants intended to remain; which injury is augmented the longer the thinning is delayed.

It would be impossible to state any particular plan of cultivation which would suit all conditions of the land, or every season; but the mode must be varied according to circumstances. Should I lay down any particular method, and it were followed by all,

although some might succeed in making a good crop, the rest would be "put in the grass."

After thinning, the grand object will be to keep the crop clear of grass, and well supported with earth. For which reason, also, to cause the plants to "grow off" early, I prefer the beds low at first. If possible to avoid it, I would never draw earth from the cotton, and would not plough deeply. With regard to the former, however, we must be guided by the weather and state of the crop. In wet weather we should not draw up, as by so doing we might cause the stalks to rot at the surface of the earth, and if the grass were large we could not cover it sufficiently to destroy it. If the rain were to continue, and the grass be large, it must be drawn into the middle of the alley and "capped," or it will take root again.

In reference to topping, I would be governed by circumstances. Should the stalks appear too luxuriant, particularly if accompanied with a wet season, I would top.

Having spoken above, of the different modes adopted of planting the seed, I will here suggest a plan of sowing so scattering as to require no thinning, which would be a great saving of time in working the crop, and what is of more consequence, the cotton would come up stronger, "grow off" earlier, bear sooner, and yield fruit in greater abundance. A smaller quantity of seed being used, it might more conveniently be soaked, which might add to the probability of obtaining a "stand" in dry weather. I would propose to soak them in salt-petre and copperas, and rub them in lime to protect them from insects, and to promote the growth of the plants. If the drill method be adopted, let the seed be sown thinly as turnip-seed is; so that there will be little or no thinning to be done. If chops are preferred, let one seed be put in each. If checks, one or two according to the number which it is desired should remain. For the two latter modes, the seed might be selected while sowing; the soundness and vigor of which might be determined I suppose, with sufficient accuracy by the size and plump feeling. Or if preferred the seed could be sorted out during winter, at leasure. A hand would pick out, say one peck in a day, taking up two or three seeds at a time, which would plant nearly two acres in checks, four by three, one seed to the check. This would be tedious, but would save the time occupied in thinning at a more busy season. This latter plan of selection, however, is not recommended, the former

being considered more feasible and sufficiently exact. Even were a worse "stand" the consequence, might not that be more than counterbalanced by the advantages obtained. From seed selected in either of the above-mentioned modes, we might expect more vigorous plants; a valuable manure would also be obtained by the saving of seed, and the nutriment peculiar to the cotton plant not so much exhausted. According to the theory, perhaps most generally received, the spungioles of plants cannot select their food, but are compelled to absorb whatever is presented to them sufficiently liquefied to pass through those minute vessels, whether beneficial or useless, or even detrimental; the plant assimulating what is proper for its use, and exuding the rest.

Now when there is a quantity of seed sown, nearly all the plants arising from which, are to be thrown away, a portion of proper nutriment is taken from those which are to remain and thrown away also; while the useless and detrimental exudations have been previously returned to the soil.

By the thin planting the stalks too would sooner acquire size and strength to resist in a measure, the depredations of the "*Aphides*," or plant-lice, which sometimes make their appearance in vast numbers. I have seen it related that "Reaumur has proved that one individual in five generations may become the progenitor of nearly six thousand millions of descendants." They commonly attack the buds and the lower side of the leaves. When there is an oily appearance on the upper surface of the leaf, it is a sure indication of the work of the "*Aphis*." Upon turning the leaf over, the insects will be discovered. Although so unfriendly to the cotton-plant, it is said their society is eagerly sought by the ant, which profits by their depredations, feeding upon a sweetish liquor, called honey-dew, exuded by them. Upon the backs of some of them may sometimes be seen an oblong whitish substance, which is probably the work of another insect, the "*Ichneumon*;" for it is related that the latter deposits its eggs in the bodies of the former, as it does in those of many other insects; from which eggs a small fly is hatched out. This latter insect however, is considered harmless to the plant, and inimical to the "*Aphis*."

The cotton-plant being very tender when young, and tardy in its growth, the use of the weeding-hoe is important in its cultivation; and the proposition which I wish to advance is, whether the profits

of the planter would not be enhanced by using it more, and the plough less; thereby diminishing the enormous yearly expense of horse-power, and the additional outlay, in the first instance, of capital in the purchase of land for their support. According to the present plan, say, a planter working seventy-five hands will require twenty-five work-horses, that he cultivates eight acres of cotton to the hand, and four of corn, which will be six hundred acres in cotton and three hundred in corn. Now, my suggestion is, to dispense with fifteen of these horses, and diminish the proportion of corn, which is an exhausting crop. To feed that number of horses at one hundred bushels to each one yearly, it will require one hundred and fifty acres, at ten bushels to the acre, which is exactly one-half of the whole amount planted in corn. I say ten bushels to the acre, because it must be without manure, for if those horses were not kept, all the manure could be applied to the remaining seven hundred and fifty acres. But here I must admit, that the manure from these horses of course would be lost. The one hundred and fifty acres would cost say fifteen hundred dollars, with the interest annually, and taxes. There would also be more fencing to be done, and so more timber land wanted, more gears needed, and more stables to be built. Add to this, fifteen horses at seventy-five dollars, which would cost eleven hundred and twenty-five dollars with interest. Now although this reduction of horse-power would be felt in the cultivation of the crop, yet there would be less to cultivate, and there would be fifteen hands added to the hoe; and all light, friable portions of the fields might frequently be worked without being preceded by the plough. Then there would be the advantage of hoe-cultivation over that of the plough. In addition to the above, I would plant less than twelve acres to the hand, manure more, and would do also much of the ploughing in the winter, before the crop was planted, instead of afterwards.

The cultivation of cotton is rapidly increasing; there is, therefore, a stronger motive to the planter, to promote an increase in the consumption also. The crop raised in the United States amounts now* to about 2,000,000 of bales. What I wish to show is, that the cotton planters in those States, have it in their power to consume over 50,000 of the above, by using cotton goods on their plantations *merely*, independent of their persons. Let us make the calculation:

* The amount on which the calculation is partly based, was selected about Sept. 1843.

to enclose the entire crop, (at five yards to the bale,) it will require 10,000,000 of yards of cotton bagging, which would weigh, say about - - - - - - - - - - 13,084,112 lbs.

At 1 pound of cotton thread to sew 48 bales, - - -	41,666 "
Cotton rope, 50 yards, weighing 5 lbs. - -	2,666,665 "
There are, say 1,000,000 of persons, the clothing of whom is under the control of the cotton planters, at $2\frac{1}{2}$ pounds of cotton osnaburgs to each individual,	2,500,000 "
Cotton thread to sew summer and winter clothes for the above-named, - - - - - - -	50,000 "
Cotton picking sacks for half the number of persons above-stated, - - - - - - - -	100,000 "
Cotton thread to make the sacks, - - - - -	2,500 "
	18,444,943

Calculating an average bale to weigh 350 lbs., the above would consume over 50,000 bales.

There is much guess-work in the calculations in this article; particularly in regard to the number of individuals under the control of the cotton planters.

Now, it may be objected, that the manufacturer of cotton bagging could not compete with the manufacturer of hemp; and the latter kind of bagging would become so low, that it would be to the interest of the planter to give it the preference. To such an objector, I answer, that should such be the case, still the object would be gained, although in a different way from what it was intended; for if an equal amount would be saved to the planter, by a reduction of his expenses, it would amount to the same thing, as if he had gained it by an advanced price on the sale of his produce. It is an old saying, "a penny saved is a penny gained." It must be borne in mind, that the thin planting, and reduction of horse-power, are not recommended for immediate adoption, but for experiment.

JOHN CLARKSON.

TO PROTECT HENS FROM VERMIN.

A gentleman from Hanover requests us to state the fact, that *pennyroyal* woven in their nests, will perfectly and certainly protect hens from the annoyance of vermin. He generally makes the nest entirely of this strong scented herb. [*Southern Planter.*

For the Southern Agriculturist.

THE LONG STAPLE COTTON AND THE CUBA TOBACCO,

versus

THE SHORT STAPLE COTTON IN SOUTH-CAROLINA.

From the depressed condition of the market for the short-staple cotton, I am induced to offer a few remarks, proposed for ameliorating the condition of the planters of the short-staple cotton in South-Carolina; I am aware, however, of the indifference in which many such articles have been received by the planters; yet without experiments and changes, many valuable discoveries that are the sources of wealth, and the pride and admiration of the age, would have been, doubtless, wrapt up in oblivion. We have been and are yet a progressive people, and must continue so, or else we must retrograde, as has been the lot and condition of all of those who have preceded us in the scale of existence.

At the time of the Roman invasion, the inhabitants of Britain lived as savages, and appeared in painted skins, and at the time believed their condition to be permanent; but it was not so, for afterwards we find them enjoying the society of civilized man, and in building rail-roads, steam-ships, and manufacturing—a demonstration which should at once, render us dissatisfied with our present condition, and inspire us with motives calculated to produce a revolution in our occupations; and at this juncture, I cannot conceive of any thing which would tend that way with more velocity, than the production of the long-staple cotton and the Cuba tobacco; either if planted on light and friable hammock lands would renumerate sufficiently for the labor that would be required in the cultivation.

That the long-staple cotton and the Cuba tobacco can be cultivated in South-Carolina and Georgia, as far north as the 33 degree, with considerable profit to the producer, we have abundant reason to believe, and from the circumstance of its having been produced in various parts of the interior of Florida, renumerating sufficiently to warrant the almost entire abandonment (unless on very tenacious soils,) of the culture of the short-staple cotton. I am fully aware that I now occupy debatable grounds, from the geographical situation and extreme southerness of Florida; yet with all the advantages she may have over South-Carolina, we are not to be persuaded that

they are sufficiently important to cause a neglectance in South-Carolina.

I will introduce a few remarks out of many which could be produced relative to what has been realised by a few of the farmers of Florida. I remark that great many of the farmers of my acquaintance, (and most of them residing in the interior) have gathered at least one bale of the long-staple cotton (on an average) per acre. I have been informed by Col. Cattan Rawles, that the tobacco growers at and near Clear Water Harbour, (during the past year,) realised at least the sum of five hundred dollars per acre; also, I was informed by Col. John Rupell, of Thomas County, Georgia, that a farmer who resides near him in Middle Florida, had realised by the culture of a lot of tobacco of eighteen yards square, the sum of two hundred dollars; and also that another individual with two hands, on pine land, (though well trod with cattle) had realised the sum of one thousand dollars.

From the foregoing, it must be apparent to every farmer, that a concilation of the farmers of South-Carolina, (and even Georgia) to some other occupation, would be the means of releasing them from the burden incurred, and the small profit now realised by the cultivation of the short-staple cotton to such an extent.

Persons desirous of planting the Cuba tobacco, can be informed as to the planting and cultivation, by referring to the back numbers of the Southern Agriculturist.

One year's residence in Florida, by

J. A. M.

Wacahoota, East Fla., March 5th, 1845.

From the Transactions of the N. Y. State Agricul. Society.

INSECTS INJURIOUS TO THE FARMER AND GARDENER.

A SERIES OF ESSAYS, BY WILLIS GAYLORD.

(Concluded.)

Nearly all domestic animals, and many wild ones, are subject to the attacks of several varieties of gad-flies, of which the *Œstrus bovis*, or ox gad-fly, is the most common, as well as injurious. The fly somewhat resembles a small bumble bee, dark brown color, brown wings, and rounded pointed abdomen. The ovipositor consists of four parts, that slide into each other like the points of a telescope. Selecting the victim of attack, which is usually a young beaste in

good condition, the fly alights on its back, generally a little on one side, and with its ovipositor speedily deposits an egg beneath the skin; from the fright and terror of the animal, the operation must be painful, and it is probable some acrid or irritating material is injected at the same time with the egg. A small swelling, called a warble or wurmal in Europe, soon appears, and if examined is found to contain a small white worm. This grub lives in the fatty or cellular tissue, forming a kind of burrow partially filled with pus, and furnished with an opening to admit air or the escape of useless matter. The egg is laid usually in August, and the grub remains until June, when it leaves the animal and escapes to the earth, in which it passes the pupa state, emerging in a month or six weeks a perfect insect. The reindeer, red-deer, goat, rabbit, &c., all have their particular gad-flies or warbles; and a few years since we killed a common black squirrel *(Sciurus niger)* that had an enormous warble on his neck, from which we cut a proportionally large grub. Too little attention is commonly paid by farmers to this insect; for, though after the egg is once laid, the grub appears to give but little uneasiness to the animal, yet the fright and uneasiness a single fly will occasion a whole herd, day after day, should induce the farmer to do all in his power to check their increase; besides, though the hole made by the bot will apparently close, every tanner is aware that such places are never as firm and sound, as is the hide in other parts. By passing the hand over the back of an ox or cow, the presence of the worm is detected by the tumour at once. It is easy to destroy the grub at this time, the pressure of the thumb and finger will effect it, or a few drops of spirits of turpentine poured into the opening, after having first forced out by pressure what pus it may contain, will kill it. If the larvæ has obtained a considerable size, it will be better to extract it, which is easily done, by slightly enlarging the orifice with a sharp pointed knife, and squeezing out the grub.

Contrary to what might naturally be expected from its uncleanly habits, the hog suffers less, perhaps, from the attacks of insects than any other of our domesticated animals. The most dangerous enemies to which he is subject are two species of *Entozoa*, one of which causes the disease called in swine the measles; and the other that peculiar weakness of the spine, causing the animal to drag its hinder parts along, and which is now known to be produced by the kidney worm. The first is a *Cystocercus*, the last a *Filaria*. Swine in warm climates more frequently suffer from these insects than in colder ones, yet these diseases occasionally show themselves every where. In the Tennessee Agriculturist, vol. ii. page 38, may be found an account of the kidney worm from the pen of Dr. Martin, of Ky., well known as a successful breeder of swine, and a careful observer. Of a hog attacked with this disease, he says, "When killed there were probably more than a hundred worms in the kidney, and dispersed through the leaf fat, which was very much

discolored near the kidney, from the escape of urine into it. The worms were generally about the size of a common pin; the largest I saw was as large as a No. 1 sewing needle. The kidneys were almost consumed, and the worms could be easily traced in the fat, by leaving a track as if a buckshot had passed—where not discolored by the urine, of a whiter color than the surrounding fat." Doses of spirits of turpentine and tar, according to Dr. M., have the power to destroy the kidney worm; a pint of tar and a spoonful of turpentine at a time. Some have been cured by giving them twenty grains of arsenic or ratsbane. A writer in the Southern Cultivator asserts that a free use of copperas, dissolved in water, and mixed with meal so as to form a dough, is an effectual cure. One ounce a day is sufficient for a dose, and some six or eight may be necessary for a cure.

We believe that if farmers would allow each of their hogs a handful of salt and ashes with their food once on twice a week, and a handful of sulphur once a fortnight, their swine would be neither troubled with measles, kidney, or intestinal worms; certainly we have had none of these, or similar diseases among our swine, since we adopted a course in the main similar to the one recommended.

The various species of lice, the *Pediculi*, hold a prominent place among the insects that prey upon and injure domestic animals. According to Kollar, &c., all kinds of animals, either in the skin, hair, wool, or feather, have under certain circumstances some species of this insect, and some more than one at the same time. When found in great numbers, the irritation they cause is excessive. The animal becomes restless, poor, diseased in many ways; and, unless relieved in some way perishes. Sometimes they produce the disease called by physiologists *Phthiriasis*, which is dreaded by every farmer who may have seen it among his animals. As the lice multiply in number, "horses bite themselves and each other, their manes and tails fall off—the hair of the head and neck fall off cattle; and the wool from the whole body of the sheep." They swarm in every part of swine, and Vibourg declares they gnaw into the skin, muscles, &c. so that they come out of the nose, mouth, eyes, and even with the excrements. The first thing to be done, when stock from any cause become infested with lice, is to remove the diseased ones from the healthy as soon as possible. If the latter are then kept clean, frequently curried, and well fed, they will usually escape. Cleanliness of all kinds is indispensable where it is wished to free animals from this pest. The diseased animals may be first washed in soap suds—when dry, carefully curried, an operation to be repeated once or twice a day; and these measures, taken in connexion with the open air, either in pasture or yards, may render other measures unnecessary. But should the lice remain, recourse must be had to some lotion, salve, or wash, that will kill them. One of the most common remedies is the common mercurial ointment of the shops, *unguentum*, rubbed on the skin around the neck, or in such places that the ani-

mal cannot reach it with its tongue. Lice are rambling creatures, and this application usually kills them soon. Washing animals with the decoction of tobacco will destroy lice; but made two strong, or applied unskilfully, it will also kill the animal. If the decoction is made in a strong lye, it is said to be more effectual. We have known a decoction of the common black hellebore of the swamps used for lice on animals, and it is said with success. A statement has lately appeared in our agricultural journals, that the water in which potato skins or parings have been boiled, will free those animals to which it is applied, from lice; but of its efficacy we know nothing.

In England, a wash made of arsenic and corrosive sublimate is much used for sheep that become lousy. The wool is parted to the skin in many places along the back and sides, the neck, &c., and this preparation placed carefully on the skin. This is evidently a dangerous remedy, as sheep having lice are apt to be biting out and eating their wool, and many sheep have in this way been poisoned. Tobacco smoke blown into every part of the wool by means of a bellows, is also used as a remedy, and said to be effectual. Animals after they have been freed from lice, are apt to continue to rub more or less; but a little oil rubbed over the spots made raw and sore by that process, will usually give ease. In Europe, a principal ingredient in all applications for lice, is a decoction of the *Ledum palustre*, and many of the remedies usually sold for killing this parasite are mere preparations of this plant.

Fowls, particularly those kept in confined situations, and when they are unable to dust themselves, are apt to become infested with a kind of louse called the bird spider-fly. It is also found occasionally on the large wild birds, such as the hawk and owl. We know of no positive application for this insect, but it will disappear from domestic fowles if a suitable place for dusting themselves is provided, and the hen-house thoroughly swept and whitewashed. Lice, on all animals, appear oftener in the spring, when their condition is reduced, and are rarely troubled when proper precautions are taken for cleanliness and good feeding. If too a little sulphur is occasionally fed to them, they will rarely be attacked by vermin.

The honey bee, which contributes so much to the health and comfort of man, is subject to a kind of louse which causes much damage, rendering the infested bee unfit to labor in summer, and by causing it to fall to the floor in autumn or winter, where it perishes with cold or hunger. The insects looks like a small spider, and is of the size of a flee, dark brown, and sometimes three or four are found on a bee. The common beetle is infested by a similar parasite, and more have observed them on this insect than on bees. By examining bees as they enter the hive, the louse is easily detected, and when seen, is readily scraped off with a feather and killed.

But the most dangerous and troublesome enemy the bee owner has to encounter, is the bee moth, sometimes called *honey-comb moth, (Tine cerella,)* the larvæ of which lives on the comb, and destroys

bees by its filth and stench. The moth usually deposits its eggs around the base of the hive or in its crevices; and the worm, immediately on issuing from the egg, provides for its safety by spinning a web into a covered way, where it is safe from the attacks of the bees, and from which it issues at night in search of wax, its proper food. Ascending to the combs, where these do not reach the floor of the hive, the worm soon makes a lodgment in the masses, and bids defiance to the bees to dislodge him. Several hundred have been found in a single hive, and when they become numerous, the hive and combs become covered with their webs, and the space between the combs, with the thicker pieces and the filth of the worms. The grub attains its size in about three weeks, when it makes for itself a heavy thick web or envelope, in which it passes the pupa state. The moth appears in about fourteen days after the caterpillar enters the pupa state; but as there are two generations in a year, those that enter the pupa state in the fall remain in that condition through the winter. According to the best observers, the moths of the first generation appear early in the spring; those of the second in July.

We have tried, and have seen used, various kinds of hives intended to protect bees from the moth; but none can be considered as certainly safe, and the best method of saving the bees, is to frequently examine the hive, keep the bottoms and corners, clean, carefully trace out and remove with the grub any webs or cells formed, and it will do no injury to frequently sprinkle salt on that part of the board occupied by the base of the hive. Some apiarians have recommended that a light should be placed near a hive, to attack the moth at night; but this will do little good, as the moth that hatches in the hive rarely leaves it until her eggs are deposited.—Some have used a shallow vessel, containing some substances, such as oil of spike, spirits of turpentine, &c., offensive to the moths. These, covered with muslin, and placed under the hive, are said to be useful in preventing the entrance of moths from without to deposit their eggs in the combs.

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We have thus gone over the ground assigned for the limits of this paper, and noticed the principal enemies that are injurious to Agriculture, either as preying on plants cultivated by the farmer or gardener, or the animals most useful to man, in their domesticated state. The list might have been greatly extended, but those who wish to extend their acquaintance with injurious insects, will find it advisable to consult the pages of Kollar, Harris, &c. &c. If this paper should be the means of awakening the attention of the cultivators of the soil, and the growers of fruits, to their insect enemies, and offer a guidance to the best mothods of relieving themselves from those enemies; if it shall excite attention and inquiry, and promote a more careful habit of observation in all; the highest aim of the writer will be answered.

For the Southern Agriculturist.

ANALYSIS OF MARLS FROM THE VICINITY OF CHARLESTON.

By Charles Upham Shepard, Professor of Chemistry in the Medical College of the State of South-Carolina.

In connexion with my lately completed course on Chemistry applied to agriculture, the following results were obtained, which as they were in some respects novel to myself, may not prove wholly uninteresting to others.

The specimens examined may be conveniently referred to, under the following names: 1. *Yellowish grey chalk-marl;* 2. *Greyish white chalk-marl;* 3. *Argillaceous chalk-marl;* 4. *Marly limestone.*

1. *Yellowish grey chalk-marl. (Green marl.)*

This is a loose, slightly cohering stone, much freckled with brown and blackish grains. It easily crumbles down when wetted, at the same time assuming a dark, greenish grey color. When the crumbled particles are thoroughly washed with water, so as to float off the finer powder, we discover with the aid of a common microscope, little fragments of shells, zoophytes and echinoderms, as well as of bones, mingled with fine grains of sand, and occasionally with particles of green earth. Dry lumps of this marl do not emit the argillaceous odor on being moistened.

(*a.*) From Mr. J. P. Clements plantation, on the west bank of Ashley River, fourteen miles above Charleston. The bank is 30 feet above the bed of the river, and directly contiguous to navigable water.

Silica, - - - - - - - - -	28.00
Carbonate of lime, with traces of carb. magnesia,	58.00
Phosphate of lime and magnesia, with traces of peroxide of iron,	8.80
Alumina, - - - - - - - - -	0.80
Water, - - - - - - - - -	4.00
	99.60

Water boiled on this marl, takes up an abundance of sulphate of lime and of chloride of calcium. The stone gives off fumes of ammonia on being wetted with solution of potassa. It is also slightly impregnated with bitumen, or mineral-tar.

(*b.*) From the Rev. Dr. Hanckel's place, at Church Creek, St. Andrews. In connexion with this locality, I noticed various fragments of fish-remains, and casts of a small *Cardium*, about ¾ of an inch in diameter.

Silica,	29.08
Carbonate of lime,	44.40
Carbonate of magnesia,	9.58
Phosphate of lime and magnesia, with traces of peroxide of iron,	7.00
Alumina,	.80
Water,	4.00
	94.86

Soluble ingredients and bitumen, the same as in (*a.*)

(*c.*) From Pon Pon on the Ashepoo. This fragment was handed me by Dr. Holbrook.

Silica,	34.41
Carbonate of lime,	58.56
Carbonate of magnesia,	2.12
Phosphate of lime and magnesia, with traces of peroxide of iron,	2.47
Alumina,	0.40
Water,	4.00
	101.96

Contains bitumen. Soluble ingredients not tested.

Mean result for the three foregoing localities.

Silica,	30.43
Carbonate of lime and magnesia,	57.55
Phosphate of lime and magnesia,	6.09
Alumina,	0.66
Water,	4.00
	98.73

With traces of peroxide of iron, ammonia, sulphate of lime, chloride of calcium, bitumen, and very feeble indications of some compound of potassium.

2. *Greyish white chalk-marl.*

This is a fine grained, porous, easily pulverized stone, strikingly analogous in its lithological properties to the chalk-marls of Westphalia. Its color is greyish white, sometimes tinged brown by iron, and rarely having a pale yellow hue, mingled with the grey. It is

easily crushed to powder, even with the strength of the hands, especially if it is wetted. It is richer in fossil remains and impressions, than the variety first described. The most conspicuous of these fossils are an anthophyllum of a conical form, and one inch or more long, a slender jointed coralline, a caryophyllia, stem of a pentacrinites ? spines and plates of echini, a cast of a small belemnites, of a natica, a fulgur, a ranella, a scalaria, a mytilus, a venus (2 inches across) and a cytherea (of about one inch) a cardium and shells of a balanus (1 inch across and $\frac{3}{4}$ high.) In addition to these, are noticed frequent fish remains, as teeth, bones and scales, as well as irregular fragments of bones, which must have belonged to larger animals.

(*g.*) From Drayton-Hall. Specimen from Dr. Drayton.

Silica,	10.20
Carbonate of lime,	66.04
Carbonate of magnesia,	2.56
Phosphate of lime and magnesia, with traces of peroxide of iron,	8.60
Alumina,	1.00
Water,	4.00
	92.40

Rich in ammonia, sulphate of lime, chloride of calcium, with distinct traces of bitumen.

(*b.*) From Dr. Geddings' plantation, called "Elms," on Goose Creek, a branch of Cooper River, and fifteen miles from Charleston. It has a pale buff color, and is less fossiliferous than the variety from Drayton-Hall.

Silica,	18.60
Carbonate of lime,	68.00
Carbonate of magnesia,	1.20
Phosphate of lime and magnesia, with traces of peroxide of iron,	9.20
Alumina,	.40
Water,	4.00
	101.4

Bitumen and soluble matter as in (*a.*)

(*c.*) From Mr. T. Harleston's plantation, called Elwood, on Cooper River.

Silica,	16.200
Carbonate of lime,	76.880
Carbonate of magnesia,	1.406
Phosphate of lime and magnesia,	2.600
Alumina,	traces.
Water,	4.00
	101.086

Soluble matter and bitumen, only in traces.

Mean of the three results.

Silica,	15.00
Carbonate of lime and magnesia,	72.06
Phosphate of lime and magnesia,	6.80
Alumina,	.46
Water,	4.00
	98.32

3. *Argillaceous chalk-marl. From Mr. Dixon's Plantation.*

This is a light, porous, fine grained, clayey looking marl, which emits a strong argillaceous odor when moistened, and easily falls to pieces in water. Its color is dark grey, with a tinge of yellow. It embraces small, white fragments of shells, and strikingly resembles certain fresh water-marls. Among its particles, when well washed, are noticed grains of sand and of bone; but the latter in much smaller quantity than in either of the foregoing varieties.

Silica,	16.00
Carbonate of lime,	63.50
Carbonate of magnesia,	7.00
Phosphate of lime and magnesia, with traces of peroxide of iron,	2.00
Alumina,	4.75
Water,	5.00
	98.25

Soluble salts, only in traces.

3. *Marly limestone, from Wilmington, N. C. Found in thick beds, contiguous to the steamboat-landing.*

This is rather a firm rock, often sub-crystaline and rich in fossils, both zoophytic and molluscous, besides containing frequent remains of fish. Certain portions of the bed which are softer and more cretaceous in appearance, embrace irregular, oval balls, sometimes of the size of a hazle-nut or almond, which are green and often mottled like serpentine. Their surface is often sprinkled over with coarse grains of sand. In hydro-chloric acid, they are principally dissolved with rapid effervesence; from which, ammonia throws down a copious precipitate of phosphate of lime and magnesia, and the clear liquor subsequently affords abundance of lime and magnesia. The matter not taken up by the acid appears to be sand and green earth. It is not easy to explain the origin of these green nodules. The marly limestone has the following composition:

Silica,	16.00
Carbonate of lime and magnesia,	80.00
Phosphate of lime and magnesia,	2.80
Alumina,	1.00
Water,	2.00
	101.80

REMARKS.

Prior to these analyses, it was difficult to account in any very satisfactory manner, for the known efficacy of such marls in agriculture; since the soils on which several of them had been employed were known by analysis, to be no more deficient in carbonate of lime and magnesia than the prolific soils of the Mississippi Valley. The reason assigned for marling in South-Carolina by Mr. Ruffin, viz: that carbonate of lime is thereby afforded to land, does not appear to me to be the chief motive the planter has for following up this practice.* It would rather appear that the soluble, saline matter and bitumen are also among the active ingredients of this species of mineral manure, while the phosphate of lime and magnesia, is

*This writer in his Report on the Agricultural survey of this State, (p. 51, et. seq. 1843,) observes, that this ingredient has a strong chemical attraction for soluble, putrescent matters, vegetable and animal, and a power of combining with them, forming compounds which cannot be decomposed by air, water or heat, and which cannot therefore go to waste, but which are perfectly decomposable by the powers of growing vegetation, and therefore may be profitably and entirely used as food for plants. Herein, he

that constituent, which in my opinion, is decidedly paramount to all others.

This view of the efficacy of phosphatic marls, accords with what is known of the large proportion of phosphate of lime and magnesia found in the fruits of plants, and especially in those of the cereals;* it having been observed that where this amendment is employed, that the maturation of the grain is more perfect, the quantity and quality both, being highly promoted.

To place the requisition of these phosphates by plants, especially in the ripening of seed, in a still stronger light, I may in conclusion, quote the recent experiments of Dr. Vogel, *(see Annalen der Chimie und Pharmacie* 1844,*)* on the distribution of mineral substances by the individual organs of plants. This interesting paper commences with the statement of what was known before, viz: that the incombustible residues obtained from different organs of the same plant do not agree with one another in composition; the ingredients being often quite different in kind, and always in their proportions. For instance, the ashes of the tubers of the potato are quite different from those derived from the tops; while other diversities again exist between the composition of the balls and that of the stems.

Dr. VOGEL selected for his experiments, the Ashes of the Pyrus spectabilis and of the Sambucus nigra.

In the trunk of the first of these plants, he found,

Alkaline carbonates,	4.6
Carbonate of lime,	82.2
Carbonate of magnesia,	4.9
Phosphate of lime and magnesia,	8.8
	100.5

In the leaves were found,

Alkaline carbonates, with traces of chloride of sodium sulphate of potassa, and alkaline phosphates,	6.8
Carbonate of lime,	72.9
Carbonate of magnesia,	9.76
Phosphate of lime and magnesia,	10.50
	99.90

observes is the great secret of the benefit of Calcareous manures. Other useful services enumerated by the same judicious writer, are their neutralizing the acidity of certain soils, altering the texture and absorbency of others, causing crops to mature earlier, also as being an essential aliment of plants, of preventing malaria, and finally of serving to impart to plants such a healthy and vigorous state of growth as to enable them *to escape the ordinary* sources of injury.

*See analyses of cotton, Indian corn and rice, in former numbers of this Journal.

In the fruit.

Alkaline Carbonates,	1.9
Alkaline phosphates,	14.1
Carbonate of lime,	37.00
Carbonate of magnesia,	5.52
Phosphate of lime and magnesia,	18.60
Silica,	3.70
	97.92

On comparing these results, it appears that the soluble salts are nearly eight times greater in the fruit than in the stem. The phosphates augment also in the fruit, while the carbonates fall off from 86 to 45.

In the Sambucus nigra, the quantity of phosphoric acid in the trunk, amounted to 10.5 p. c., whilst in the leaves, to 13.6, and in the fruit to 20.3, p. c.

DORCHESTER (MARYLAND,) FARMER'S CLUB.

A paper was read, and presented to the Club, on the culture of Indian corn, by the President, Dr. Joseph E. Muse—

When it was unanimously resolved, that it be published in the Cambridge Chronicle, and that Dr. Muse be requested to continue his paper—for the next meeting of the club.

For the Dorchester Farmer's Club.

ON THE CULTURE OF INDIAN CORN.

The question of the best method of culture of Indian corn, is one of primary importance: and reports of the various experiments, that have resulted favorably, may tend to settle the interesting problem.

The partial practice of my method "by late fall, or winter ploughing"—"and drill planting," for more than fifteen years; and my exclusive adoption of it, for half that period—and the obvious reasons in favor of it, have concurred to satisfy me, by the general results, in various kinds of seasons, that it is the best mode of growing that valuable staple of our country—and, at the same time, of sustaining, or improving the soil, on which it is grown.

I would be understood, in my remarks, to confine them to lands having a due portion of alumina; and at least, a moderate coating of grass, or vegetable matters of any kind, on the surface.

The method is the following:

During the winter, or late in the fall, the field is ploughed under a true and well turned furrow, sufficiently deep to avoid returning the

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sward in the subsequent work;—the accuracy of this operation will have considerable influence on the eventual management and success of the method; if well done, there will be but little occasion for *hoe* labor, to clear away the grass, as but little will vegetage from the inverted sward.

In this state, the whole will remain till the season of planting—when a light plough is skimmed over the surface, in the direction of the first furrow—the "corn planter" is then introduced; which furrows—drops—covers—rakes and rolls the corn, in one operation; or, it may be done, though more tediously, without this instrument.

The lines in which the grain is dropt, are four feet apart—the grain in the lines, about twenty-four inches—and two plants left.

When the corn is sufficiently large, a light double furrowing single horse plow, is run, as near to the plant, as possible; throwing the earth from it; and as soon as convenient the earth is returned to it—this is the whole of my plowing; then follows the cultivator, as shallow, and lightly, as possible, to keep the surface, at all times, friable, and open to the free access of the sun, and air—and not omitting the roller, whenever necessary for fine pulverization, which is in all cases, essential to good culture; the drier the season, the more, the cultivator is used: the hoe is but little required in ordinary seasons, for the grass—and never in any season, to make the slighest hill—and the general cultivation is as *level* as practicable.

By the free admission of the fermentative agents—sun and air, the inverted sward will furnish the soil with the soluble, and nutrient gasses—the products of its decomposition, which, though volatile, will be fixed by their union with the *moisture*—*alumina*, and other *substances* in the soil; and this process will happen, chiefly, at a time, to meet the peculiar demands of the plant, whose organic structure, and vital powers, will enable it to seize upon, estimate, and apply to its uses the nutriment thus furnished;—ammonia, and nitric acid there generated, and preserved, will abound in the soil—and in fact, a *quasi* nitre bed is formed among the spongioles of the roots, which will not only yield the gasses it may contain, but it will, as is known to every physical inquirer, abstract from the atmosphere, *nitrogen*, indefinitely—without which element—a deficit, of frequent occurrence, the grain, though it may form, and ripen, yet it will not contain an essential constituent of food for animal sustenance.

By the culture contended for, the porous surface of the inverted turf, is presented as a sponge, to imbibe readily the ammonia—and nitric—and carbonic acids, held in solution by the rain, and snow which fell upon it, and become fixed, as before explained, for the use of the present and future vegetation.

Contrast this with the usual practice of spring and summer plowing, and *cross plowing*—and the sward, recently turned, is thrown back into its former position—the grass is as it were, replanted for much *hoe* labor, as it had not remained in a condition to suffer decomposition; or, so far as it had undergone this proceess, the products are wasted by exposure on the surface, to the action of the sun and

air—and a total loss to the plant, and soil, or nearly so, is the inevitable consequence.

By *drill* planting, too, we may have more than double the number of plants, that the usual method allows in safety—leaving two plants, at a point, the distances named, will make about ten thousand stock to the acre, and the lines arranged in a North and South direction, they will have abundance of space for air and light.

Practically, I have found this to be true—my crops have suffered from drouth, less than those under the ordinary practice of cross planting; which is manifestly to be ascribed to the continual flow of vapors among the roots, and their ascent around the plant, from the fermenting mass below—promoted by the frequent use of the cultivator, preserving a loose, open surface, and allowing the free entrance of the fermentative agents—heat—air—and moisture.

Much more—in *fact*—and in theory, might be aduced, in favor of the practice indicated, but my paper has already exceeded the limits designed—and I will not now extend the discussion.

JOSEPH E. MUSE.

Feb. 12, 1845.

EXPERIMENTS IN PLANTING CORN.

Lots 40 *poles long and* 2 *poles wide.*

Lots.	Number of rows.	Distance in the rows.	Number of stalks in a hill.	Distance between the rows.	Number of stalks in the lot.	Product.
No. 1	7	3 feet	4	4 ft. 8½ in.	5,775	30 bushels.
" 2	7	3 "	3	" "	4,620	35 "
" 3	7	2 "	2	" "	4,620	34 "
" 4	7	1 "	1	" "	4,620	33 "
" 5	8	3 "	3	4 ft. 6 in.	5,280	37½ "
" 6	8	3 "	2	" "	3,520	34½ "
" 7	8	2 "	2	" "	5,280	36 "
" 8	9	3 "	3	3 ft. 8 in.	5,940	30 "
" 9	9	3 "	2	" "	3,960	32 "
" 10	10	3 "	3	3 ft. 3½ in.	4,400	34 "

Sir,—As the time for planting corn is approaching, I send you in the table above the result of an experiment made by me, in compliance with my promise to you last summer. The ground was all of equal quality, and never had any aid except clover and plaster.

In 1843, we had no rain to wet the roots of the corn till the 29th of July, from which time forward the season was favorable. The

lots, in order to be accurate, were measured before the corn was planted. The corn was drilled. The 6th column gives the distance between the rows. No. 5, you will perceive, produced at the rate of 75 bushels to the acre; No. 6. at the rate of 69 bushels; but I think the distance in the latter preferable. There is one-third less stalks—consequently, it is easier tended and gathered. I am now in the habit of putting my rows 4 feet apart, and planting 3 feet, and 2 stalks in a hill. The lots were ploughed twice, which is my usual custom, and which answers on clover land. I receive great benefit from not pasturing my farm land. The clover remains as a shade for the earth; which I have no doubt is beneficial. I keep standing pastures for my stock; they consist of green sward, principally; which is much superior to clover for grazing.

I would just observe, that I sow at this season of the year one bushel of plaster to the acre, broadcast on the land that I intend putting in corn this year. I would advise you to try the experiment on a part of the land you intend to put in corn.

Yours, very respectfully,

WILLIAM WEAVER.

Buffalo Forge, Jan. 7, 1845. [*Southern Planter.*

INDIAN CORN.

Mr. Editor,—I have seen in the January number of the Planter a request from one of your correspondents residing in the county of King and Queen that I would communicate through the columns of your work the result of my *experiment* of the last year in the cultivation of corn, accompanied by remarks of your own, in which you say, "Several verbal requests to the same effect have been preferred from time to time, and they have been verbally commnnicated to Mr. Botts, as they have been received, but with no other effect than to obtain a promise from him that we should hear from him as soon as he could find time to prepare a communication." No doubt you are right, but I must in extenuation of my negligence, and apparent indifference to the cause of agriculture, assure you that in the multiplicity of my engagements, it escaped my observation at the time, as it does my recollection now—for as all such experiments are designed as much for the general good, as for my own advantage, I could not have hesitated in giving the results, to any to whom I supposed they would be interesting, particularly when called for. But to the subjetc.

In the first place, then, I planted on the same lot that I did the previous year, and to make up for the exhaustion consequent upon so large a production as had attended the first experiment, to wit: twenty barrels to the acre, I used it as a farm pen and kept my cattle upon it during the winter; but whether this (although it was made perhaps as rich) restored all the properties required for a large yield of the same crop as had been made upon it the previous year, has been, I confess, a matter of some doubt in my own mind, and I

should like to have the opinion of others, more scientific than I profess to be, on that point. I then prepared the land as before, soaked the corn in a solution of saltpetre, and rolled it in ashes and plaster, as is my custom, and planted it as intimated in my former communication, to wit: in rows three feet apart, and at the distance of ten inches in the row. The additional foot allowed in the rows, enabled me to give it one working, when about knee high, with the ploughs, which was all it had and all it seemed at any time to require. It was much more seriously affected by the drought in the latter part of the season than was the previous crop, and there was, on that account, in part, at least a considerable diminution in the product. It yielded but thirteen barrels and a fraction to the acre; but whether this was to be ascribed entirely to the dry weather or partly to the thinner planting, or in part, again, to its being on the same land, I have not been able to determine, to my own satisfaction; and this year I propose to select a different piece of ground—one-half of which I will plant as in the first experiment which yielded twenty barrels, to wit: in rows two feet apart and nine inches in the row, and the other half as in the last, which yielded only thirteen barrels, to wit: in rows three feet apart and ten inches in the row, to which I may perhaps add a third experiment—by planting in rows four feet apart, eighteen inches in the row, and two stalks in a hill—the result of all which I will, if they should prove worthy of communication, give you without having "the fire applied to my back."

In conclusion, let me say, that seventeen years experience in the cultivation of the corn crop has satisfied me that in rich lands generally corn is planted too thin—for it is impossible to gather a heavy crop if it is not put in the ground and suffered to grow. I am an advocate for thick planting, (I mean, of course, *on good corn land*,) because it shades the ground, keeps it moist, arrests the growth of grass, checks the influence of the sun, and requires less work, but chiefly because, with a fair season, it produces more corn. *My business*, I think, is to put the proper quantity of corn in the ground and trust to Providence for a season to ripen and mature it. Permit me to say, also, that I am an advocate for earlier planting than most persons. I do not think corn can be planted too soon after the spring sets in and the land becomes warm enough to receive and nourish the grain; the reasons for which I may offer you at another time, but not now; so, also, of seeding wheat. I am satisfied that the great failures in the wheat crop in our climate is attributable to late seeding more than to any other one, two, or three causes—and in land capable of producing good wheat I would always, if I could, sow between the 20th of September and 10th of October, and take the chance of fly, which in strong land will be overcome by the wheat, but in weak land will destroy it—but such land as that has no business being put in wheat at all. But this is rather more than your correspondent or yourself bargained for, and more than I set out to do, and I will, therefore, "haul up."

Respectfully, JOHN M. BOTTS.

Henrico, Jan. 27, 1845. [*Southern Planter.*

CLOSE PLANTING OF CORN.

The Hon. *John M. Botts*, in an article in the *Southern Planter*, upon the subject of growing corn, says:

"In conclusion, let me say, that seventeen years experience in the cultivation of the corn crop has satisfied me that in rich lands generally, corn is planted too thin—*for it is impossible to gather a heavy crop if it is not put in the ground and suffered to grow.* I am an advocate for thick planting, (I mean of course, *on good corn land,*) because it shades the ground, keeps it moist, arrest the growth of grass, checks the influence of the sun, and requires less work, but chiefly because, with a fair season, it produces more corn."

This is not mere *opinion* with Mr. Botts, but opinion backed by experience and actual results, he having, the season before the last, raised 20 barrels of corn to the acre, and last year 13 barrels. He has, therefore, a right to speak with confidence of the utility of *close planting*. Indeed, he who will take the trouble to make a calculation, may very readily satisfy himself of the truth of Mr. B's proposition, that "*it is impossible to gather a heavy crop, if it is not put in the ground,*" as unless the requisite number of *stalks* be there, a large quantity of *ears* cannot be grown; and we are happy to find the opinion we have so often advanced, that *close planting* tends to prevent the *firing* of corn sustained by so competent a judge. We have always repudiated the idea so pertinaciously insisted upon by the generality of farmers, that wide planting was preventive, in droughts, of the corn being burnt up, as the phrase is. To us it always appeared reasonable and philosophic to suppose, that where the number of plants upon the ground were sufficient to afford *shade* between the rows, that, as a necessary consequence, moisture must be maintained, as the partial exclusion of the sun inevitably tended to arrest, to a certain extent, the process of evaporation, and consequently *prevented*, instead of promoted, the *firing* of the plants. If sufficient space be left between the rows for the free circulation of the air—and the rows be run north and south—the corn plants may be permitted to stand a foot apart in the rows without the least fear of detriment to the product, provided the land be rich enough to afford the requisite quantum of nutriment to the plants while maturing. We repeat it—let the soil be naturally rich enough, or made so by proper manures, to yield the required food, and it matters not how close the plants may stand in the rows provided they be not nearer than 12 or 18 inches apart, if the rows be at least three feet asunder. *Drought*, long continued, will, whether the corn be 3 or 5 feet apart, exhaust the soil of more or less of its moisture, and, of course, to a greater or lesser extent, affect the blades by evaporating their juices, but it is equally true, that this effect will be, to a less extent produced to *close*, than to wide planted corn, and for the simple reason, that the former keeps off the dying rays of the sun, and thus prevents the escape of moisture, while the latter augments evaporation, and exhausts the soil of its supply of water.

The *firing* of the blades of corn, is, we think more properly ascribable to the improper cutting of the roots by ploughing after the plants have attained considerable *height*, than to the distance at which they may be planted. The food which they derive from the *earth* is taken up by the *roots*, while in a state of solution, and it stands to reason, that if these be cut off, the means of feeding being for a time stopt, that operation must be arrested, and hence an impairment of the condition of the plants will follow, as, without the supply being continuous, healthfulness cannot be preserved, and the evidence of decay manifests itself in the changed condition and color of the blades or lungs of the plants, which, for want of the salts of the earth, which can only be furnished in a liquid state, must, of necessity, become exhausted of their chief support.

Corn worked with the plough in dry weather, as we are aware, will change the green healthful appearance of its blades, assume a livid hue, and ultimately that the blades will become deprived of all moisture, but this is the effect of the injury done to the *roots*, and not because of the contiguity of the plants. In proof of this position, let the *cultivator* be used instead of the plough, and the stirring of the *earth* will produce a contrary, as its capacity for attracting and absorbing the gases of the atmosphere will be greatly increased, while the earthy feeders—the roots of the plants—will not be disturbed in their integriy, but on the contrary receive an invigorated impetus from the pabulum thus drawn from the air. [*Amer. Farmer.*

CORN PLANTING TIME—CORN CULTURE.

As the time has already arrived in many parts of our far reaching country to plant corn, and in a few weeks more it will be time every where, it may be opportune to throw out a few brief hints, not as to the best mode,—for every grower of this nutritious grain is, already, in possession of the *best* method of culture—but as mere suggestions as to what *we* consider a good plan to ensure a remunerating crop. To begin then at the beginning—he who expects to make his acres tell a tale of production that he need not be ashamed of, must lay himself out, in the *first place*, to put his ground in good condition, and this can only be effected by deep ploughing, and such pulverization, by harrowing and cross harrowing, as will make the tilth as fine as Ole Bull's fiddle. To expect the corn plant to grow and mature its fruits luxuriantly in a cloddy and half prepared soil, is just as unreasonable as would be the attempt to get up steam without fire. In the *second place*, unless his land be in a very high state of fertility, he must make arrangements to manure his corn ground with a liberal—nay with a prodigal hand—for, of a truth, the corn plant is a most voracious feeder, and delights, like many a gormand, to luxuriate amidst gross viands of various compounds.—

In the *third place*, if he desires to assume the best chance of success, and ensure against the accidents of "flood and field," he should plant early. In the *fourth place*, he should be assiduous in working his crop from its first coming up, until he lays it by, in order that, in the race for the mastery, the *weeds* may always be kept down, and never for a day be permitted rob the corn plants of any portion of the food which may be buried in earth, or floating in air. In a word, the earth should at all times be kept clean of weeds, and open to the influences of sun, air, dew and rain, agencies as essential to their growth as the best and most enriching manures.

We have recommended deep ploughing in the preparation of the soil for the reception of the seed, but far, very far, would we be from recommending deep ploughing after the plants arrive at any considerable height. Indeed, after the first working, we would abandon the plough altogether, and rely upon the cultivator, to be followed by careful hoemen to eradicate such weeds as may not be reached by the former implement; for notwithstanding many intelligent writers, as well as practical planters, contend that the *cutting of the roots* by the plough is beneficial, we cannot reconcile the practice to our notions and common sense view of things. Nature intended the *roots* as the mediums of feeding, and every act of violence,—every separation—to which they may be subjected, must necessarily tend to retard their growth, because such treatment arrests that continuous absorption and elaboration of that portion of their food which is derived from the earth.

With regard to very large crops of corn we have a remark or two to make. It must be obvious, that, without *close planting*, no matter what the quality of the soil may be—no matter how notably the culture may be pursued—unless a sufficient number of stalks be grown upon an acre, the yield will always be more or less circumscribed, as without the *stalks* be on the earth they cannot produce ears of corn.

It should be an object of every corn grower to provide his corn ground with lime, plaster and ashes, as well as the nutritive manures, for unless there be *potash* in the soil to dissolve the sand, and form what is called the silicate of potash, the substance which comprises the *outercrust* of the corn-stalk—vegetation cannot go on with that economy which leads to the fructification of the grain, as the stalks are mainly constituted of sand, reduced by the action of potash, into a fluid state, and thus taken up by the roots and distributed, so as to impart to it the capacity to stand erect and sustain its burthen.

Ten bushels of ashes and one of plaster, well mixed together, is sufficient for an acre, whether sowed broadcast, or used in, or on the top of each hill. We have sometimes thought that the best disposition to be made of ashes and plaster, would be, to compost them with the manure of the barn yard before hauling it out to be ploughed in;—by such treatment, every part of the corn field would derive benefit from their application, instead of its being confined to the immediate vicinity of the hills.

The soaking of the seed of corn in a weak solution of *saltpetre*, or of *copperas*, before being planted, has a two-fold good effect—it promotes early germination and prevents the depredations of worms and birds. We have used both soaks, and never without being impressed with the conviction of having derived advantage from each.

We have with decided good effect sown 2 bushels of salt, broadcast, on an acre of corn after it had come up. The effect as it manifested itself to us, was, to maintain, in one of the driest seasons we ever recollect to have experienced, a degree of moisture on the part where the salt was used, highly beneficial—to have preserved the blades green, when those all around the salted part crumbled into powder on the slightest touch of the hand.

The remarks which we have made, are based upon the result of close observation, in an experience of some years, and we, therefore, embody them thus timely, in order that our readers may avail themselves of them. Should they do so, we doubt not but that their experience will be coincident with our own. [*American Farmer.*

ON SETONING.

The utility of setoning for the cure of several diseases incident to cattle, cannot be doubted. There are many localities in which, if farmers did not adopt this precaution, they would lose great numbers of their young from the black leg.

In some districts the hoose in calves is very prevalent and fatal: where this is the case, they should all be setoned when they are getting into condition, and before they are attacked by the disease. This will either lessen the violence of the complaint or prevent it altogether.

In joint evil, I have frequently inserted a seton in the dewlap with decided good effect.

Setoning will be often prescribed, in the course of this treatise, in inflammatory complaints; and it acts by exciting a new and artificial inflammation in the neighborhood of the former one, and thus lessening its intensity. This plainly proceeds on the principle of diverting to another part a portion of the blood which was determined to the original one, while also a new direction is given to a portion of the nervous influence or power which was concentrated on it. This is in accordance with the generally received medical maxim, that no two violent inflammations, of different character, can exist in neighboring parts at the same time; and that in proportion to the intensity of the one the other will be diminished.

By the discharge which a seton produces it will likewise relieve the overloaded vessels of a neighbouring inflamed part.

Mode of inserting a Seton.—The seton is commonly made of tow

and horse hair plaited together, or cord or coarse tape alone, or leather. It should be tolerably thick, and eight, ten, or twelve inches in length. Before inserting the seton, it should be dipped in oil of turpentine. The seton being now prepared, an assistant is to hold the animal, while the seton-needle, with the cord affixed to it, is plunged into the upper edge of the brisket or dewlap, and brought out again towards its lower edge: the space between the two openings should be from four to eight inches. The seton is to be secured by fastening a small piece of wood, or tying a large knot at either end of the cord. Matter will begin to run the second day, and, after that, the cord should be drawn backwards and forwards two or three times every day, in order to irritate the parts, and by this means increase the discharge.

When setoning is had recourse to inflammatory complaints, the cord should be dipped in the following blistering ointment:

Blistering Ointment.—Take yellow basilicon, one ounce; cantharides, in powder, three drachms; spirit of turpentine, two fluid drachms.

This ointment will be found to act efficaciously and quickly in stimulating the parts to action, and hastening on the supparative process.

The root of the common dock forms a very good good seton, and one that will act speedily and powerfully; but the best of all, where a considerable effect is intended to be produced, is the root of the black hellebore. This will very quickly cause considerable swelling as well as discharge. [*From "Every Man his Own Cattle Doctor."*

ODDS AND ENDS.

To Young Farmers,—When you take your cattle from the fields, finally, in the fall, they should not be suffered to go on again until spring, (May or June.) It gives them a distaste to dry food; and particularly, should you remember, that they should have exactly as much as they will eat of such food as is given them; not a straw or shuck more than they eat. So important is this latter injunction, that it cannot too strongly be impressed on your attention. An old gentleman, famed all his life for fat cattle, used to be so particular as to remove every particle of food given at the previous feeding, from the pen. This gentleman's name is authority in such matters. The Yankees feed their cattle at sunset and again before they go to bed, lest, as they say, their appetites, exceedingly delicate, as it regards their winter food, become cloyed—and the Yankees know! Whatever the reason may be, the fact is established, that this plan being diligently followed, if the cattle are put into their pens fat in the fall, they will come out fat in the spring. Give them a very small portion of food in the fall, when first put up, and let it be increased as their appetite demands.

To make the best Beef you ever tasted.—Select one of your cattle that has been in good condition for some months previous—commence the first day of March to give it one ear of corn, with a tablespoonful of salt on its *back*, every morning, before sunrise. Continue this treatment until the first of November succeding; then give it a gallon of meal a day until killed, and you will have a beef, the very appearance of which will make one's "mouth water." The place, and the hour for the administering the salt and corn, should be particularly marked, as upon it depends, in a measure, the secret of the fattening process. Regularity is the one thing; regularity is the second thing, and regularity the third thing. The feed being the first! The plan has for its father and most successsul follower for a number of years, old Colonel John Overton, of Louisa, who who was in matters of this kind authority, such as My Lord Coke or Blackstone are in law.

Have all your lambs altered as soon as they drop, or if not then, which is preferable, because less troublesome, as soon as they have cleverly done coming. They will be one-third larger and fatter at killing time. Try it, if you don't believe.

Alter your calves, also, as soon after they come as is convenient. And I have no doubt but that colts should be altered at the same age, or as soon as the testicle makes its appearance; but in this, experience does not support me, as in the other cases, never having been able to divest myself of the impression left on my mind by the old, but I am disposed to think unfounded theory, that they should be left to run at least two years, to attain that vigor necessary for the performance of the arduous work put on them.

Colts and oxen should always be broken and put to moderate but not very constant work at *two years old.* If you have never seen it tried, you would be surprised at the powerful development of muscle engendered thereby; indeed all those powers which in after life are to be called into such active exercise, are mightily enlarged. This fact may be accounted for on the most rational principles, but EXPERIENCE in this as in most of the cases above, establishes it beyond a doubt.

I may at a future day give you some more of my experience or practice, if the fine theories of the present were not so calculated to put them in the back ground.

Your obedient servant, M.

January, 15, 1845. [*Southern Planter.*

MANAGEMENT OF POULTRY.

Poultry is subject to a variety of diseases but nearly all of a serious nature are attributable to the effects of climate or want of care or skill.—Pip is caused by a want of clear water, or by drinking dirty water in dry weather. Cure—remove the white blister found upon the tongue, and wash it with warm vinegar and water—

feeding the bird for a few days with soaked bran and lettuce; or cabbage chopped very fine.

Flux is cured by pills of the yolk of an egg boiled hard, mixed with bruised hemp seed, or boiled rice diluted with wine.

Costiveness, the reverse of the former, is cured by giving them beet root chopped fine or bran and water with a little honey mixed.

Vermin may be destroyed by fumigating the roots with brimstone.

Scab and itch are cured by feeding them with moist bran.

Cramp is caused by cold and damp. When afflicted, the bird should not be allowed to roost out of doors, and the roost should be well secured and warm—rub the legs and feet with a little fresh butter.

Abscess frequently comes upon the rump, and is caused by heat of blood, or torpid stomach, which corrupts the mass of blood. Open the abscess and press out the matter. Feed them with beet root or lettuce, with some bran mixed, moistened with honey, or molasses and water. Fowls should not be allowed to roost in very large numbers together, but where great quantities are raised, they should be kept in flocks of not more than one hundred. They should be kept very cleanly.

Warmth, with freedom from damp, is the great secret in the care of fowls. Their food should be frequently changed, and green food often mixed with their meal, shorts or bran. Indian meal and molasses and water will fatten poultry faster than any other food. Cinders should be sifted for them to roll in, which will free them from vermin, and they should never be without a supply of clean water for drinking.

Never give them warm or hot food, which causes them to become crop bound. Hemp and buckwheat, or wheat occasionally, are good stimulants.

So far as food is concerned, every farmer's wife throughout the country knows what is proper—One great danger arises from their voracity of appetite inducing them to eat too much of food too nutricious for their delicate digestive organs, whereby they become sickly, or what is commonly called crop bound. Simple as the remedy for this evil may appear, it is somewhat difficult to put in practice where large numbers are fed together.

As regards attention to cleanliness, and their other common wants, such as regularity of feeding, and an abundant supply of pure water, nothing need be said; they can scarcely live, certainly not flourish, without these necessary requirements being strictly attended to.

Under, however, the best arrangement, and the greatest precautions used against their various ailments, many will perish. It is truth, however, that almost all the diseases of poultry arise from atmospheric causes.

With respect to medical treatment, applied to the disease of poultry, but little regarding its efficacy is known. The nostrums and mode of treatment adopted throughout the country, together with

the great part of what has been written upon the subject, is a farrago of nonsense and absurdity. If shelter, warmth, food, and cleanliness, congenial to their habits, will not preserve them in health, but little reliance can be placed upon medicine.

The best food for chichens until three or four days old is eggs either stale or fresh, boiled hard and cut into very small pieces. After which, meat wet up, and hommony dry. As they grow older, the feed should be varied, and they should have more or less green food, like lettuce, cabbage, endive &c., chopped fine and mixed with their meal; and loppered milk and bonny-clabber is most excellent. Cold boiled potatoes, fresh meat, crust of bread soaked, and many other things usually thrown to the pigs, are excellent and profitable food for all kinds of gallinaceous fowls. [*Mickle's Treatise on Poultry.*

Island Ford, Edgefield District, S. C., Feb. 1845.

To Col. A. G. Summer, Editor of the South-Carolinian.

Dear Sir:—When I saw you last, you asked me for some directions for cultivating corn-stalks and making sugar. I transcribe for you an article, containing much useful information on the subject, from the Saturday Courier published in Philadelphia. I now take pleasure in complying with my promise, to furnish you with my own experience.

CORN-STALK SUGAR.

DIRECTIONS FOR CULTIVATING THE CORN-STALKS, AND MAKING SUGAR.

"In various portions of the country, the cultivation of corn for the manufacture of sugar, continues to excite attention. The public are seeking information upon the subject, as the discovery that sugar can be made from the stalks of corn, is of recent date. We take pleasure in presenting our readers any facts that may be of importance, upon the subject. Dr. Naudain, of Delaware, who has had opportunities to gather knowledge upon the various experiments that have been made, presents some views which will not fail to be regarded with interest.

"With regard to the culture, it is stated that "corn should be planted as broom-corn is commonly planted, very close in the row, probably a stalk every three or four inches. The tillage will be the same as for broom-corn. When the young ears begin to appear, it is necessary to pluck them off carefully, and to repeat the gathering as often as necessary, so as *to prevent the formation of any grain.*—Because, if grain be allowed to form, it takes all the sugar from the stalk. About the time the corn begins to harden, the making of sugar should be begun.

"It is not necessary to say anything about a proper mill to crush the stalks and separate the juice, because mills of the cheapest kinds only, should be employed now, until the business would fully war-

rant an expensive outlay. It would probably be found that the common cider mill, with plain cylindrical nuts, would be quite sufficient for the farmer who would raise a fourth or half an acre of corn for sugar, for his family, and this quantity would be quite sufficient for satisfactory experiment.

"When the juice is separated from the stalk, about a table-spoonfull of white-wash, made of the *best quick lime*, and about the consistence of thick cream, should be added to each gallon of the juice, and then the boiling should commence. The scum that rises should be carefully removed; and the juice, if this process has been properly conducted, will be quite clear, nearly colorless. Then commences the process of evaporation; and when the juice has boiled down in about the proportion of eight gallons to one, the boiling will be completed, and it may be poured out into a shallow, tight wooden box to grain.

"It has been ascertained, although as yet the reason is not known, that if the juice be boiled in a deep vessel, like the common cooking vessel, sugar will seldom be obtained; while if it be done in a shallow vessel, so that the juice at the commencement of the boiling shall not be more than three to five inches deep, sugar would be obtained without difficulty. It has been ascertained, also, that the sugar from corn will not grain so readily as that from the sugar-cane; and in some instances, it has remained more than a week after the boiling, before the sugar was formed, and yet excellent sugar was made.

It should be particularly remembered, that the juice should be boiled as soon as separated from the stalk. It becomes acid very soon, and no sugar can be made if the juice be allowed to stand two or three hours before it is boiled. The juice will even spoil in the stalk before it is ground, if the stalks be cut off a few hours before grinding. It is necessary, then, that every part of the process should be done with the greatest despatch. The stalks should be brought to the mill as soon as cut, and ground immediately. The vessel for boiling ought to be properly filled in two hours grinding, and the process of boiling down should immediately commence, and be continued until completed.

"Excellent sirup, superior to the best molasses, will be obtained by observing the above directions, and boiling five gallons of juice to one gallon.

"The juice of the corn stalk is very rich in sugar, when cultivated in the manner suggested. Tested by Beaume's sacharometer, the instrument used to measure the strength of sirups, the juice of the corn stalk weighs 10 to 10½ degrees, which is about the weight of the best cane in the West Indies, and is richer that the juice of the cane in Louisiana, which is seldom heavier than 8½ degrees.

"One gallon of juice will produce nearly 1¼ pounds of sugar; and one acre of good corn will yield, if carefully expressed, from 700 to 1,000 gallons of juice."

I have but little information to add to the above article. My kettle

holds eighty-gallons, though a sixty gallon kettle might answer the purpose, but probably it would be best to procure a shallow vessel, as above recommend for making sugar. I made three boilings before I made good sirup, not boiling down sufficiently the two first boilings. Prepare yourself with a skimmer, a gourd with a long handle will do to remove the scum when it begins to boil, and for a short time after. Leave off skimming, when you see the dark glutinous scum is pretty well removed. Also prepare yourself with an iron ladle, with an iron handle attached to it about three feet long, (which any blacksmith can make) perforated with small holes. Whoever attends the kettle must use this ladle, in raising the juice with it, when likely to boil over. When the juice boils down considerably, you will see the bubbles begin to show and burst on the surface.—When you see a few such bubbles, if it be your object to make sirup, I think then is the time to take it out; but if you wish the sirup to granulate, boil till the bubbles become general on the surface. You can also test it, by dipping out some sirup with a tablespoon, and when it cools sufficiently, by taking it between your thumb and fore-finger; and if it inclines to rope it is sirup, but if it will rope about an inch it will granulate. You can boil rapidly at the commencement while the juice is thin, but as it thickens boil with more moderation. If you boil too rapidly after the bubbles begin to burst on the surface, you will certainly burn it, and it will give it a candy taste. If you cannot get lime conveniently, lye will answer the purpose. I should say put in about a half a pint of lye to every fifteen gallons of juice. Throw in the lye or whitewash made from the lime, immediately after you quit removing the glutinous scum. When you have boiled to satisfy yourself, take out the sirup, and put it in some shallow vessel to cool. I am inclined to think, when the juice has been extracted from the stalks by a wood mill, that if they were chopped up and boiled in water, good vinegar could be made from them. I advise you to build a wood mill. The expense is trifling. You can get a mechanic in my neighborhood, who will build you one for twenty-dollars, by furnishing him too assistant hands; otherwise, send over a common mechanic, and after looking at mine, which is a good model, you can have one made at home.—I advise you to plant your corn for experiment in bottom land (if not rich, make it rich by improvement) in drills, from four to six inches in the drill, and the drills from thirty to thirty-six inches wide.—Now sir, I close my crude direction, by wishing that you may all win in this race, and that we may all win, and that another article of general consumption may be added to the products of South-Carolina.

Yours respectfully,

JAMES S. POPE.

METHOD OF MANUFACTURING SUGAR.

We copy the following Letter on the improvement in Manufacturing Sugar, from the Hon. H. L. Ellsworth's last Annual Report. We would invite the particular attention of our Planters who are engaged in the manufacture, to a careful perusal of the same.

"New-Orleans, December 30, 1844.

"I received in due time your favor of December 9, 1844. In answer, I reply by a sketch of my remarks concerning the portion of the crop already made on Parkwood's plantation.

Before the apparatus was ready to work, Parkwood made by the common process 130,000 pounds, at an average rate of 1,620 pounds per acre. It was sold at 4½ cents the pound. The market was then one cent higher than it is now. It would not now be worth more than 3½ cents. From each thousand pounds of sugar, they obtained 70 gallons of molasses, and burned 3 cords of wood, including the fuel which supplies the steam-engine.

Since the new apparatus worked, Parkwood made at a daily rate of 12,000 to 18,000 pounds within twenty-four hours—500,000 lbs. at an average rate of 2,750 pounds per acre. The sugar being of two different qualities, in the following proportions: the four-fifths of the first (say 2,200 pounds) sold up to this date at 6½ cents, and the remaining fifth (say 550 pounds) sold for 4½ cents. For each thousand pounds of sugar they obtained only 14 gallons of molasses, and burned one cord of wood, including the supply of the steam-engine. They employed the refuse cane alone. Molasses in both cases has been sold at 18 cents the gallon.

Merrick & Towne, the assignees of the apparatus and process, of which I am the patentee and inventor, may ascertain the following: 1st. An increase of 40 per cent. in the quantity of sugar obtained from the cane; 2d. An increase of 50 per cent. in the price; 3d. A saving of two-thirds of the fuel.

From the above, it may be easily perceived that the advantages of this new process are such, as to double the revenue of a plantation. The saving of fuel and sufficiency of the refuse cane to make the crop, is a question, not only of the greatest importance for the planter, but also highly deserving the attention of the whole State of Louisiana. There are to day many plantations where the whole of the wood is cut and consumed, and where the owners are unable to make any more sugar, on account of the deficiency of fuel. There is also an immense extent of lands, and the richest of the State, which would never be applied to the cultivation of the sugar-cane, on account of a total absence of wood. Such difficulties are remedied if the refuse cane is sufficient.

Merrick & Towne have determined to construct three different sizes of the apparatus, (Nos. 1, 2, and 3,) sufficient to make 6,000, 12,000, and 18,000 pounds of sugar within twenty-four hours, with

cane-juice at an average density of 8°. The prices are such, that a planter may cover his expedses by the increased value of his first crop, and without any direct outlay.

No mineral agent but lime has been employed for clarifying. It shows at once that the advantageous results obtained, grow entirely out of the apparatus itself. It worked well, in the most satisfactory manner, and without interruption. It has been managed by four hands only.

The sugar is dry, free of molasses, and ready to be shipped, and reach uninjured the northern ports of the United States, and sustain there the competition of Porto Rico and West-India produce.

I am unable to come now to a more specific conclusion; but I shall endeavor to send, within a fortnight, to Mr. Ellsworth, a complete and correct statement of the full trial made by Parkwoods.—I hope to be ready in proper time for its admittance in the annual report. This statement will be followed by some comparative remarks about Desranes' process going on in the island of Cuba.

I do not wish to see any particulars of the process itself printed this year; I claim publication only for the results obtained. I ought to be careful against infringements.

Yours, NORBERT RIELLIEUX.

To DR. FLEISCHMAN.

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Very important improvements have been introduced in sugar making, and some inventions patented during the year 1843 have been put to the test during the past year. And if reports which have come casually to the Patent Office are true, they must be of great value to the inventors, and of the highest importance to the southern portions of our country. The improvements are threefold—being in the economy of fuel, evaporating the sirups, and granulation of the sugar. Important improvements have also been made in the modes of filtration. In one of these, the sirup, or, indeed, any liquid to be filtered, is run into the centre of a cylinder filled with pulverized charcoal, or other filtering material; the cylinder being kept in rapid revolution, the liquor is forced through perforations on its outer face by centrifugal action. The experiments with the cornstalk sugar have been prosecuted with promising success, and it is likely to become a profitable occupation.

HOW MUCH DO OUR CROPS OBTAIN FROM THE AIR?

One of the most interesting and important questions which employs the skill and science of the vegetable physiologists, as well as the practical farmer, is, how much, or what per cent., of the food of vegetables, is obtained from the atmosphere? That a large amount is obtained from this source has long been known, or believed, but what proportion is not so well known, nor what conditions are necessary in order to enable the plant to take the most of this food and assimilate it to its own system in the best way, is not yet fully ascer-

tained. We have been very much interested in reading an address, delivered by Dr. Lee, of Buffalo, before the Monroe County Agricultural Society. He there asserts that plants—a field of wheat for instance—obtains 97 per cent. of their food, and consequently 97 per cent of the amount of the produce is derived from the atmosphere, and but 3 per cent. only, obtained from the soil. How this act is ascertained, or how it may be demonstrated, does not appear. There cannot be a doubt that every plant has some peculiar character of its own, which requires it to be placed in certain circumstances, in order to enable it to absorb what the air supplies for food, and to make it convert the greatest portion of it, to the growth and maturing its peculiar fruits. There cannot be a doubt that oftentimes a plant may grow in an atmosphere full of the necessary elements for its increase and health, and yet some little requisite—the absence or scanty supply of another element, may prevent it from availing itself of this abundant supply of atmospheric food. Hence the importance of thoroughly understanding all the laws by which the germination, growth and maturity of every species of vegetable which we cultivate are governed. But in order to ascertain these exactly, it requres more critical knowledge of chemistry and botany than the great bulk of farmers possess, and more time to be employed in research than many men, even of scientific experience, have to bestow upon it. For this reason, we suggest that agricultural societies should bestow some of their funds in in the shape of premiums, or otherwise, for the purpose of instituting exact experiments upon this subject, and to elicit and make known to the public all the knowledge which can possibly be thus discovered. [*Maine Farmer.*

A GOOD COMPOST FOR SANDY LAND.

Take 10 loads of stable or barn-yard manure, 5 loads of clay, 10 bushels of ashes, and 20 bushes of lime, mix the whole well together, let it remain well in pile a few days, turn it over, when it will be fit to apply to the land·

The above quantity will make a better dressing for an acre of sand than twenty, or even twenty-five loads of stable or barn-yard manure alone, and will last longer. Let any one who may doubt, try it, and they will be convinced of the truth of what we say.

[*Southern Celtivator.*

A NEW VARIETY OF POTATO.

Messrs. R. Sinclair, Jr. and Co. of Baltimore, have just received 25 bushels of potatoes, which are thus spoken of by one of the most respectable and extensive agriculturists of our State, residing near Ellicott's Mills, whose letter is now before us:

"The large potato I gave you, appeared in France in or about 1840, as a new variety; they sold at or near $20 a bushel; it is called the *Sommillier* potato—It is said to produce one hundred for one, if planted in a rich soil, 3½ feet apart, and hilled up twice or three times—It is said to be a good table potato." [*Amer. Farmer.*

COW PEA.

There is no doubt, in the minds of many practical farmers, that the cow pea is the best renovator of worn out, or tired land, that can be used in the South. Plant early in May, between hills of corn, and cultivate with corn, the produce for hogs alone will doubly pay all cost; it will in reality almost equal the corn crop. The vine and foliage will not only shade the land, but protect from the washing, and afford a fine quantity of vegetable matter to turn under.

The reports furnished by experienced farmers, in various parts of our country, particularly in southern countries, prove this beyond a doubt. The pea is the clover for the South. [*Plow Boy.*

TOBACCO GROWING MANIA IN FLORIDA.

The editor of the Mobile Advertiser, states on the authority of a gentleman with whom he has conversed, that the part of Florida known as the "Tobacco Region," has been found to be so well adapted to the growth of good Tobacco, that it is fast filling up with emigrants from Georgia and other places, and the rush is so great that lots that could have been bought for $500, some time since, now bring $1000. The most favored portion of this region lies in part of Leon and Gadsden counties, and the quality of the tobacco produced is equal to the "Vuelta de Abajo," of Cuba. The soil is loose, black, sandy loam, from 10 to 12 inches deep, resting on stiff, compact clay. It also produces Sea Island Cotton of medium quality. [*American Farmer.*

EXCRETORY DUCT OF THE FEET OF SHEEP.

Chancellor Livingston, 1st President of the N. Y. State Agricultural Society, says the legs of sheep are furnished with a duct, which terminates in the fissure of the hoof; from which, when the animal is in health, is secreted a white fluid, but when sickly, these ducts are stopped by the hardening of the fluid. He says, he has in some instances found that the sheep were relieved, by merely pressing out the hardened matter with the finger from the orifice of the duct in each foot; it may in some cases be proper to place their feet in warm water, or to use a probe or hand brush for cleansing this passage.

[*Farmer's Cabinet.*

BURNING SMOKE.

At the last session of the British Parliament, it was enacted that from and after the 1st of last month, the furnaces of Manchester and Salford shall consume their own smoke or pay a penalty of 40s. a week for not doing so. As a matter of economy, therefore, the factory people have found it necessary to comply with the law. The smoke is effectually prevented by an extremely simple contrivance, and unattended with any trouble or difficulty to the engineers; the plan consisting merely of the introduction into the furnace of a due proportion of atmospheric air, whereby perfect combustion and a considerable saving of fuel are effected.—*Ibid.*

SOMETHING NOVEL—A GREAT CORN SHELLER.

Having occasion during the last week, to call at the Machine establishment of Mr. James Murray, at the head of the basin, in York-street, our attention was called to the fitting up of a corn-sheller, on a new principle, on board of an iron-steamer, lying at an adjacent wharf, and we availed ourself of the invitation of Mr. Murray, to be present at the trial of the sheller, prior to the departure of the steamer to the scene of its future operations. We were accordinly summoned on Thursday to give our attendance on board a new iron steamer, built in Pennsylvania, and brought through the Chesapeake and Delaware Canal to Baltimore, to receive the machinery for the operation of corn shelling, which was being prepared by Mr. Murray; she is called the Loper, and is intended for the Roanoke and Norfolk trade. The machinery for shelling the corn appears to be simple, and is a permanent fixture to the vessel. It is placed on a high upper deck, and has a hopper into which the corn is to be spouted from the banks of the river, and passes from the sheller into a screen which takes off the corn from the cob, the latter being carried by the screen several feet to take it out of the way, whilst the corn drops into the hold of the vessel without handling, and is thus ready for delivery at any market for which it may be intended. The machine is worked by the steam power by which the vessel is propelled, and it may seem almost incredible, nevertheless, Mr. Murray and the owners, one of whom was on board, are confident of its capacity to shell not less than 500 bushels of corn *per hour*, the day through! and from the manner in which it used up that which was at hand for the trial, whilst we were present, we have no right to doubt for a moment of their expectations being fully realized. The owners are Messrs. Antony & Harris, and the one present was in ecstacies at the performance, being thoroughly satisfied that it would accomplish all that had been anticipated. We learn that to Mr. Pettigrew, an eminent planter of North-Carolina, is due the credit of the plan of this invaluable machinery, and he was fortunate in his selection of such a master of his art as is Mr. Murray, in carrying into execution the suggestions of his mind—and we sincerely hope, that all interested in the matter, will be amply remunerated for their ingenuity, skill and enterprise. [*Amer. Farmer.*

REPEAL OF THE DUTY ON COTTON YARN, STAVES, TURPENTINE, LARD AND LARD-OIL, ETC., IN ENGLAND.

The steamer Cambria, from Liverpool, has arrived at Boston, bringing advices to March 4. The news is of commercial importance, and the New-York market immediately felt the effects by an advance of ¼ to ⅛c. in cotton upon the prices of the day before, which were ¼ better than at the close of the preceding week.

American produce was in demand on the continent of Europe, as well as in England, and money was abundant.

The modification of the British tariff is hailed with lively satisfaction. There is a vast amount and variety of goods to be admitted free, among these are some that materially concerns the American market. Wilmer's News Letter says:

"Cotton yarn, linen yarn, and thrown silks are all to be admitted free of duty, and amongst other things we find a few rather important articles from the United States, particularly staves, turpentine, lard, and lard oil. Of these, the last will be peculiarly acceptable, as it forms an excellent substitute for sperm oil, and, owing to the increased demand for the latter, and to the inability of the fisheries to supply it, the price has so risen as to make it very expensive to manufacturers. The import of lard oil from the United States, where it is now manufactured in great abundance, will, no doubt, be extensive as well as of other commodities named."

The European Times says:

"In the financial statement made by Sir Robert Peel, on the 14th February, besides the duties on cotton wool, coal, glass, auctions, and staves for casks, which he proposes totally to repeal, it is also proposed to abolish the whole duties on 430 miscellaneous articles, and the duty on sugar partially.

"There is no part of the new financial scheme which has given so much satisfaction as the abolition of the import duty on cotton wool. This tax has been keenly felt by the English manufacturer, for it saddled him, on the coarser description of goods, with ten and twelve per cent. more than his continental or American competitors, and in the same degree it has prevented him in the open markets of the world, from competing with his active and energetic rivals. It was a tax on the productive power of the country, and every one rejoices that it has been swept away. The abolition of the duty on cotton will hardly be less popular in America, from which we derive nearly all our supply, for what little extraneous competition the manufacturer of the Northern States may sustain will be more than counterbalanced by the advantages accruing to the Southern planter.

The price of cotton at Liverpool, on 3d inst. advanced ¼d per lb. and the market was very animated. The American provision market was dull in consequeece of the reduction of the price of Irish pork, which had impeded the sale of American; but the supply of the former would soon be exhausted, when a better demand would be realised for the latter. Of butter from the United States, there is none in the market. Cheese is in steady demand, and commands fair prices. Nevertheless, this branch of commerce is steadily on the increase, and at no distant day will form an important element in the exports from America.

The speech of Sir Robert Peel, in his exposition of the changes contemplated in the tariff, is considered a masterpiece of statesmanship. The portion of more immediate interest to our readers, we quote:—

"I now come to that article, which of all others is the most important to the manufacturing and commercial prosperity of this country. (loud cheers) I come now to cotton wool, (hear, hear,) and the duty upon it. The present duty on cotton wool is, so far as the revenue is concerned, 5-16ths of a penny the pound weight; but as that duty is applicable to the whole amount of cotton wool imported, and as about one-fifth of the total amount of such cotton wool is unavailable for the purposes of manufacture, and is necessarily waste, the duty of course, presses with increased severity upon that portion of the whole amount which is capable of being used for manufactures. It is estimated, and I believe the estimate to be a reasonable one, that we ought to add 1-16th more to the 5-16ths, in order to calculate to the full amount of duty paid upon the whole of the cotton wool that is actually manufactured in this country. 6-16ths or ⅜ths of a penny per pound weight would, therefore, be the total amount of duty paid on cotton wool. Now, when the price of cotton wool is 4d a pound on the average, ⅜ths of a penny per pound is a duty of nine per cent. on the value of the raw material. If the price of cotton wool be, as it has been of late, not more than 3d a pound, ⅜ths of 1d per pound is a duty amounting to not less than 11½ per cent. on the value of the raw material.

"This duty so levied falls with peculiar severity on the coarsest descriptions of cotton. Upon the finer muslins you can hardly estimate the amount of duty, it is so small; but the coarser the fabric, and the more it is in common wear, the higher is the amount of duty. Seeing and considering these things—seeing the amount of duty imposed upon the coarser fabrics—seeing the extent of competition to which they are exposed—seeing the importance of this manufacture to the commercial greatness of this country, we are prepared to advise the abolition of the duty upon cotton wool. (Loud and long continued cheering.) The estimated loss to the revenue by the abolition of the duty on cotton wool—taking as a guide the amount received last year—will not be less than £680,000. (Hear, hear.) In respect, then, to the revenue derived from the customs duties, we do not propose to make any further alterations than those to which I have now referred. I am not sure whether or not greater popularity might not have been obtained, by proposing other articles on which a reduction of the excise impost should be made; but I am satisfied that it is the duty of the executive government to take those articles which, whether there has been any clamor for a reduction of duty on them or not, are articles in respect of which, any duty at all is open to the greatest objection." (Hear, hear.)

The aggregate revenue of Great-Britain is put down at the sum of £53,100,000. The promised modifications in the tariff will take off some three millions or more from this aggregate, leaving enough however, for the annual expenditures of the government, which are over forty-nine millions sterling, including the interest on the public debt."

[*Amer. Farmer.*

DISSOLUTION.

The undersigned have sold out their entire interest in the "Bommer Manure Method" to Mr. George Bommer, of N Y; in consequence of which the partnership heretofore existing between us, was dissolved on the 6th ultimo by mutual consent.

Our agents are requested to make up their accounts to the 6th of November, and forward them to Tho. M. Abbett, Baltimore who is solely authorised to settle.

For any transactions after that date they will account to Mr. Bommer.

TH. M. ABBETT,
CHARLES BAER,
JOHN GOULIART.

Baltimore, Dec. 14, 1844.

N.B.—Charles Baer is the General Agent for Mr. Bommer in Georgia, and John Gouliart his General Agent for the State of Maryland.

BOMMER'S MANURE METHOD.

We have the satisfaction to announce to the Planters, Farmers and Gardeners of the vicinity of Charleston, that the Books with the Patent right, which Mr. Baer has caused to be sent on to the subscriber for disposal, have been received from Baltimore, and may be had of him on the terms before specified. Those who have bespoke them, will do well to call and obtain copies early. He also has received a report made to the Legislature of Maryland in favor of the method, which is daily gaining the public confidence whenever it is known. In the mean time we refer our readers to the last December and March Nos. of the Southern Agriculturist for some information on the subject.

A. E. MILLER,
No. 4, Broad-street.

PERUVIAN GUANO.

The subscriber has made arrangements with the Agent of the Peruvian Guano Company, by which he will be able to supply all orders for this most powerful of manures. The Peruvian is far superior to the African or Ichaboe Guano, as both analysis and experiments have proved. As this manure is believed to be not only the most powerful but at the same time the most economical known, our planters and farmers are invited to make trials with it the approaching season on their crops of cotton, corn potatoes, &c. &c. It has been extensively used in Great Britain and recently in the United States. Pamphlets containing accounts of these experiments will be furnished to those *wishing to make trial of it*, by applying (post paid) to the subscriber.

All orders from *unknown* correspondents, must be accompanied with a city reference, and the Guano *paid for on delivery*.

JOHN D. LEGARE,
Dec. 1st, 1844. No. 81 & 83 East Bay.

RUFFIN'S CALCAREOUS MANURES $1.

ELEMENTS OF AGRICULTURAL CHEMISTRY,

In a course of Lectures for the Board of Agriculture, delivered between 1802 and 1812. By Sir H. Davy.

WESTOVER MANUSCRIPTS,

Containing the history of the Dividing Line between Virginia and North-Carolina. By Wm. Bird of Westover.

THE BANK REFORMER. By Edmund Ruffin.

THEORY AND PRACTICE OF DRAINING AND EMBANKING. By John Johnston, Esq.

For sale at A. E. MILLER'S, No 4 Broad-st.

LIST OF PAYMENTS.

Dr. Wm. McQueen, Cheraw,	1841, '42, '43, and '44.	A. H. Pemberton, Columbia,	1845.
Edw. C. Johnson, Mt. Tabor,	1841 to '44.	Wm. H Swinton,	"
Abraham Huguenin,	1843 & '44.	Robert Martin,	"
Charleston Library,	1844.	Saml. Johnston, Winnsboro',	"
Dr. E. Horlbeck,	"	Hon. Angus Patterson, Barnwell,	'44&'45.
T. A. Coffin,	1845.	Abraham Wilson,	"
William Seabrook,	"	Dr. L. Reeve Sams, Beaufort,	"
Thomas Wilson, Georgetown,	"	Prof. C. U. Shepard, N. Haven, Ct.	"
		Col. Chas. E. Miller, Walterboro',	"

TO OUR READERS.

The number for April has been delayed to accommodate our writers, who had promised us their favors. We have the satisfaction to publish the "*Observations of Mr. John Clarkson on the cultivation of Cotton, designed principally for the middle districts of So. Carolina*;" which will be found highly interesting, and containing some novelty and remarkable calculation.

Professor Shepard's *Analysis of Marls*, will be received by the scientific planter with satisfaction, and contains a vast deal of information on that subject.

We beg leave to call attention to a Letter of Mr. Norbert Rielieux, on an improved method of manufacturing sugar, by which a great expense in fuel is saved, and improvement in the filteration.—And to Mr. James S. Pope's letter on making corn-stalk sugar.

We have concluded in this number the interesting description of *Insects injurious to the Farmer and Gardener*, from a series of Essays by the late Willis Gaylord.

The other articles will be found useful and instructive to our readers, and are selected from the latest Agricultural Journals that have reached us.

TO OUR CORRESPONDENTS.

We have received a correspondence between the Hon. W. B. Seabrook of Edisto Island, and Kinsey Burden, Esq. of John's Island, relative to the use of lime in the culture of cotton, &c., which although long, we shall insert in the May number of the Southern Agriculturist, at the request of both of those gentlemen.

MILLER & BROWNE,

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At the old stand No. 4 Broad-street.